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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|-------------|----------------------|---------------------|------------------|
| 10/620,944 | 07/16/2003 | Edward Hugh Welbon | 5681-66200 | 8592 |
| 35690 | 7590 | 04/06/2005 | EXAMINER | |
| MEYERTONS, HOOD, KIVLIN, KOWERT & GOETZEL, P.C. | | | PATEL, PARESH H | |
| P.O. BOX 398 | | | ART UNIT | |
| AUSTIN, TX 78767-0398 | | | PAPER NUMBER | |
| | | | 2829 | |

DATE MAILED: 04/06/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | | |
|------------------------------|-------------------------------|-------------------------------|--|
| Office Action Summary | Application No. 10/620,944 | Applicant(s) WELBON ET AL. | |
| | Examiner Paresh Patel | Art Unit 2829 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 January 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-20 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 03 January 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

Applicant's arguments filed 01/03/2005 have been fully considered but they are not persuasive. Applicant argues that Driller (US 5109596) does not teach or disclose "wherein one or more of said plurality of contact pins is formed using a pliable resistive material," as recited in claim 1, rather teaches forming only a portion of the contact pin with a conductive material.

Examiner disagrees with Applicant's because at page 5, paragraph 5 of Applicant's remarks states that "... contact pin 165 may be implemented using pliable resistive material that may provide a compression connection when mated between system board 150 and test board 170". Here, it is clear that pliable resistive material may provide a **compression connection**. Driller also discloses **compression connection** using conductive elastomer 14 and 15 with contacts 12 and 13. Therefore, Driller discloses contact pins formed of pliable resistive material as claimed.

Applicant again argues that Dishongh et al. (US Pub. 20020108778) and Lach et al. (US Pat. 6108212) does not teach or disclose "wherein one or more of said plurality of contact pins is formed using a pliable resistive material," as recited in claim 1. Examiner disagrees because Driller discloses this limitation as claimed. However, Dishongh et al. and Lach et al. references are cited to address the limitation "said pliable resistive material has a **resistance value greater than five ohms**". In claim rejection Examiner cited element 54 of US Pub. 20020108778 and PTF ink of US 6108212 to address this limitation in combination with Driller.

Applicant further argues that US Publication 20020108778 does not teach or disclose any particular resistance value. Here, Dishongh et al. (US Publication 20020108778) is silent about the particular resistance value but discloses calculating impedance (using series resistance of carbon cladding 54) to reduce propagation delay of micro-line or contact pin. Lach et al. (US Pat. 6108212) discloses resistivity of contact pin between 5 Ω -cm to 100 Ω -cm instead of resistance. Therefore, Lach et al. (US Pat. 6108212) discloses specific resistance value of contact pin as claimed to achieve desired level of conductivity in interposer (see lines 16-23 of column 5).

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-4, 8-11 and 15-17 are rejected under 35 U.S.C. 102(b) as being anticipated by Driller et al. (US 5109596).

Regarding claims 1, 8 and 15, Driller et al. (hereafter Driller) in fig. 3 discloses a test system comprising:

a system board (first circuit board for claim 1) [24] including a footprint pattern [14] of contacts for connection to a device under test;

a test board (second circuit board for claim 1) [25] for conveying signals output from said device under test to an analyzer [2], wherein said test board includes a corresponding footprint pattern [15] of contacts; and

an apparatus [8] positioned between said system board and said test board for conveying said signals output from said device under test from said system board to said test board;

wherein said apparatus includes;

a dielectric substrate [8] having a first side forming a first surface and a second side forming a second surface; and

a plurality of contact pins [12-13] each configured to convey a respective one of said signals between said first side and said second side;

wherein each of said plurality of contact pins extends through [see fig. 3] said dielectric substrate and protrudes beyond said first surface and said second surface; and

wherein one or more of said plurality of contact pins is formed using a pliable resistive material [12 and 13].

Regarding claims 2 and 9, Driller in fig. 3 discloses said pliable resistive material has sufficient conductivity to convey said signals between said first side and said second side.

Regarding claims 3, 10 and 16, Driller in fig. 3 discloses said plurality of contact pins are arranged in a pattern that matches said footprint pattern of contacts on said system board and said test board.

Regarding claims 4, 11 and 17, Driller in fig. 3 discloses at least a portion of said plurality of contact pins is configured to mate to a respective contact on said system board and said test board.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 5-7, 12-14 and 18-20 rejected under 35 U.S.C. 103(a) as being unpatentable over Driller et al. (US 5109956).

Regarding claims 5, 12 and 18, Driller in fig. 2-3 discloses each of said plurality of contact pins is configured to form an electrical connection to a respective contact on each of said system board and said test board in response to said system board being positioned adjacent to said first side of said dielectric substrate and said test board being positioned adjacent to said second side of said dielectric substrate and having a compressive force [using 10] exerted on said system board and said test board causing said pliable resistive material to deform.

Here, Driller is silent about deformation of pliable resistive material. However, conductive elastomer 14 and 15 can be mounted on contacts 12 and 13 as seen in the fig. 1, which can deform. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify apparatus of fig. 2 to add

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conductive elastomer 14 and 15 of fig. 1, in order to insure necessary pressure between device under test and other boards during testing.

Regarding claims 6, 13 and 19, Driller at lines 26-34 of column 5 discloses said pliable resistive material includes a carbon based polymer [carbon-enriched polyurethanes].

Regarding claims 7, 14 and 20, Driller is silent about said pliable resistive material has a resistance value greater than five ohms. However, it would have been obvious one having ordinary skill in the art at the time the invention of made to use pliable resistive material has a resistance value greater than five ohms, since it was known in the art that it will help reduce noise in the circuit and also to obtain desire conductivity in the circuit (see element 54 of US Pub. 20020108778 and PTF ink of US 6108212).

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

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the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Paresh Patel whose telephone number is 571-272-1968.

The examiner can normally be reached on 8:00 to 4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nestor Ramirez can be reached on 571-272-2034. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Paresh Patel
April 04, 2005


VINH NGUYEN
PRIMARY EXAMINER
A.U. 2829
04/04/05